

**CLAIMS**

What is claimed is:

1 1. A method for improving performance of a signal transmitted  
2 via a conductive circuit trace of a circuit board, the method  
3 comprising the step of:

4 reducing a surface roughness of at least one surface of  
5 the conductive circuit trace.

1 2. The method as in Claim 1, wherein the step of reducing the  
2 surface roughness includes one of a group consisting of:  
3 electropolishing the at least one surface; chemical polishing  
4 the at least one surface; electroplating the at least one  
5 surface; and vacuum depositing conductive material on the at  
6 least one surface.

1 3. The method as in Claim 1, wherein the surface roughness of  
2 the at least one surface is reduced to no more than 20  
3 microinches root-mean-squared (RMS).

1 4. The method as in Claim 1, wherein the surface roughness of  
2 the at least one surface is reduced to no more than 10  
3 microinches root-mean-squared (RMS).

1 5. The method as in Claim 1, wherein the surface roughness of  
2 the at least one surface is reduced to no more than 5

3    microinches root-mean-squared (RMS).

1    6.    The method as in Claim 1, wherein the at least one surface  
2    of the conductive circuit trace includes one of a group  
3    consisting of: a surface parallel and distal to a surface of  
4    the circuit board; a surface parallel and proximal to the  
5    surface of the circuit board; and a surface perpendicular to  
6    the surface of the circuit board.

1    7.    A circuit board for transmitting at least one signal, the  
2    circuit board comprising:

3            at least one conductive circuit trace for carrying at  
4    least one signal, the at least one conductive circuit trace  
5    having at least one polished surface.

1    8.    The circuit board as in Claim 7, wherein the at least one  
2    polished surface is polished using one a group consisting of:  
3    electropolishing; chemical polishing; electroplating; and  
4    vacuum deposition.

1    9.    The circuit board as in Claim 7, wherein a surface  
2    roughness of the at least one polished surface is no more than  
3    20 microinches root-mean-squared (RMS).

1 10. The circuit board as in Claim 7, wherein a surface  
2 roughness of the at least one polished surface is no more than  
3 10 microinches root-mean-squared (RMS).

1 11. The circuit board as in Claim 7, wherein a surface  
2 roughness of the at least one polished surface is no more than  
3 5 microinches root-mean-squared (RMS).

1 12. The circuit board as in Claim 7, wherein the at least one  
2 polished surface of the conductive circuit trace includes one  
3 of a group consisting of: a surface parallel and distal to a  
4 surface of the circuit board; a surface parallel and proximal  
5 to the surface of the circuit board; and a surface  
6 perpendicular to the surface of the circuit board.

1 13. A conductive circuit trace for carrying a signal, the  
2 conductive circuit trace comprising:

3 conductive material having a plurality of surfaces  
4 substantially parallel with a direction of propagation of the  
5 signal;

6 wherein the plurality of surfaces includes at least one  
7 polished surface having a reduced surface roughness.

1 14. The conductive circuit trace as in Claim 13, wherein the  
2 at least one polished surface is polished using one of a group

3 consisting of: electropolishing; chemical polishing;  
4 electroplating; and vacuum deposition.

1 15. The conductive circuit trace as in Claim 13, wherein the  
2 reduced surface roughness of the at least one polished surface  
3 is no more than 20 microinches root-mean-squared (RMS).

1 16. The conductive circuit trace as in Claim 13, wherein the  
2 reduced surface roughness of the at least one polished surface  
3 is no more than 10 microinches root-mean-squared (RMS).

1 17. The conductive circuit trace as in Claim 13, wherein the  
2 reduced surface roughness of the at least one polished surface  
3 is no more than 5 microinches root-mean-squared (RMS).

1 18. The conductive circuit trace as in Claim 13, wherein the  
2 at least one polished surface includes one of a group  
3 consisting of: a surface parallel and distal to a surface of  
4 the circuit board; a surface parallel and proximal to the  
5 surface of the circuit board; and a surface perpendicular to  
6 the surface of the circuit board.